"This application is assigned to Cisco Technology, Inc., the assignee of the present invention, and is hereby incorporated by reference, in its entirety and for all purposes."

and insert therefor

--These applications are assigned to Cisco Technology, Inc., the assignee of the present invention, and are hereby incorporated by reference, in their entirety and for all purposes.--; and

At page 1, line 19, please delete

"This application is related to Patent Application No. 09/232,395, filed January 15, 1999, and entitled "A CONFIGURABLE NETWORK ROUTER," having H. M. Zadikian, A. N. Saleh, J. C. Adler, Z. Baghdasarian, and V. Parsi as inventors. This application is assigned to Cisco Technology, Inc., the assignee of the present invention, and is hereby incorporated by reference, in its entirety and for all purposes.".

In the Claims

Please amend the claims as follows. For the Examiner's convenience, all pending claims appear below. Those claims to which no amendment has been requested appear in small print.

1. (Amended) A method of [generating a backplane parity value] communicating a data stream through a telecommunications system comprising:

    receiving [a] said data stream at a communications interface of [a] said telecommunications system, wherein said data stream comprises a first plurality of words;

    rearranging said data stream into a second plurality of words, wherein said second plurality of words include a relock word, and

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8   said relock word is configured to allow said telecommunications system to

9   synchronize with said data stream; and

10   for each of said second plurality of words, determining if said each of said second

11   plurality of words should be included in [a parity calculation] the

12   generation of a backplane parity value by determining if said each of said

13   second plurality of words is said relock word[, and

14   **ignoring said each of said second plurality of words, if said each of**

15   **said second plurality of words is said relock word, and**

16   **including said each of said second plurality of words in said parity**

17   **calculation, otherwise]**.

1   2.   (Amended)   The method of claim 1 [wherein said each of said words

2 is a byte] further comprising:

3   for said each of said second plurality of words,

4   ignoring said each of said second plurality of words, if said each of said

5   second plurality of words is said relock word, and

6   including said each of said second plurality of words in said parity

7   calculation, otherwise.

1   3.   (Amended)   The method of claim 2, wherein said parity calculation

2 comprises:

3   calculating said backplane parity value by performing a bit-wise exclusive-or

4   between said each of said second plurality of words included in said parity

5   calculation, wherein said each of said second plurality of words included

6   in said parity calculation is a byte.

1   4.   (Amended)   The method of claim [1] 2, wherein said first plurality of

2 words is organized as a first frame having a first frame format and said second plurality

3 of words is organized as a second frame having a second frame format.

1   5.   (Amended)   The method of claim 4, wherein <u>said relock word is among</u>

2 <u>a plurality of such relock words and</u> said second frame includes said <u>plurality of such</u>

3 relock word<u>s</u>.

1   6.   (Amended)   The method of claim [1]<u>2</u>, wherein

2   said telecommunications system includes a switching matrix coupled to said

3   communications interface, and

4   said switching matrix switches during <u>a period of time during which</u> said relock

5   word <u>traverses said switching matrix</u>.

1   7.   (Amended)   A method of transmitting information [**across**] <u>through</u> a

2 switching matrix comprising:

3   receiving information, wherein

4   said information is in a transmission unit,

5   said transmission unit is divided into a plurality of words, and

6   said words are arranged in a first format;

7   rearranging a plurality of said words into a second format; and

8   generating a backplane parity value from at least one of <u>said plurality of</u> said

9   words.

1   8.   The method of claim 7, wherein said information is received as an optical signal.

1   9.   The method of claim 7, wherein said transmission unit is a frame.

1   10.   The method of claim 9, wherein said frame is a SONET frame.

1   11.   The method of claim 9, wherein said rearranging rearranges said transmission unit into a

2 backplane frame.

1   12.   The method of claim 7, wherein said parity value is a backplane parity byte.

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1   13.   The method of claim 12, wherein

2   each one of said words is a byte, and

3   said generating comprises calculating said backplane parity value by performing a bit-wise

4   exclusive-or between said words.

1   14.   The method of claim 7, wherein said second format allows said switching matrix to be

2   switched errorlessly.

1   15.   The method of claim 7, wherein said second format includes a relock word.

1   16.   (Amended)   The method of claim [15] 17, wherein said [second format

2   includes a] relock word is configured to allow said switching matrix to synchronize with

3   said transmission unit.

17.   (Amended)   The method of claim [16] 15, wherein said switching

2   matrix is switched during a period of time [that] during which said relock [words are]

3   word is traversing said switching matrix.

Please add the following claims:

18.   A computer program product encoded in computer readable media for

2   communicating a data stream through a telecommunications system, said computer

3   program product comprising:

4   a first set of instructions, executable on a computer system, configured to cause a

5   communications interface of said telecommunications system to receive

6   said data stream, wherein said data stream comprises a first plurality of

7   words;

8   a second set of instructions, executable on said computer system, configured to

9   rearrange said data stream into a second plurality of words, wherein

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10   said second plurality of words include a relock word, and

11   said relock word is configured to allow said telecommunications system to

12   synchronize with said data stream; and

13   a third set of instructions, executable on said computer system, configured to, for

14   each of said second plurality of words, determine if said each of said

15   second plurality of words should be included in the generation of a

16   backplane parity value by determining if said each of said second plurality

17   of words is said relock word.

1   19.   The computer program product of claim 18, said computer program

2   product further comprising:

3   a fourth set of instructions, executable on a computer system, configured to, for

4   said each of said second plurality of words,

5   ignore said each of said second plurality of words, if said each of said

6   second plurality of words is said relock word, and

7   include said each of said second plurality of words in said parity

8   calculation, otherwise.

1   20.   The computer program product of claim 19, wherein said parity

2   calculation comprises:

3   calculating said backplane parity value by performing a bit-wise exclusive-or

4   between said each of said second plurality of words included in said parity

5   calculation, wherein said each of said second plurality of words included

6   in said parity calculation is a byte.

1   21.   The computer program product of claim 19, wherein said first plurality of

2   words is organized as a first frame having a first frame format and said second plurality

3   of words is organized as a second frame having a second frame format.

1   22.   The computer program product of claim 21, wherein said relock word is

2 among a plurality of such relock words and said second frame includes said plurality of

3 such relock words.

1   23.   The computer program product of claim 19, wherein

2   said telecommunications system includes a switching matrix coupled to said

3   communications interface, and

4   said switching matrix switches during a period of time during which said relock

5   word traverses said switching matrix.

1   24.   A telecommunications system comprising:

2 a processor;

3 a communications interface, coupled to said processor;

4 computer readable medium coupled to said processor; and

5 computer code, encoded in said computer readable medium, configured to cause a

6   data stream to be communicated through said telecommunications system

7   by virtue of being configured to cause said processor to:

8   receive said datastream at said communications interface, wherein said

9   data stream comprises a first plurality of words;

10   rearrange said data stream into a second plurality of words, wherein

11   said second plurality of words include a relock word, and

12   said relock word is configured to allow said telecommunications

13   system to synchronize with said data stream; and

14   for each of said second plurality of words, determine if said each of said

15   second plurality of words should be included in the generation of a

16   backplane parity value by determining if said each of said second

17   plurality of words is said relock word.

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1 25.   The telecommunications system of claim 24, said computer code further
2 configured to cause said processor to:
3   for said each of said second plurality of words,
4   ignore said each of said second plurality of words, if said each of said
5   second plurality of words is said relock word, and
6   include said each of said second plurality of words in said parity
7   calculation, otherwise.

1 26.   The telecommunications system of claim 25, wherein said parity
2 calculation comprises:
3   calculating said backplane parity value by performing a bit-wise exclusive-or
4   between said each of said second plurality of words included in said parity
5   calculation, wherein said each of said second plurality of words included
6   in said parity calculation is a byte.

1 27.   The telecommunications system of claim 25, wherein said first plurality of
2 words is organized as a first frame having a first frame format and said second plurality
3 of words is organized as a second frame having a second frame format.

1 28.   The telecommunications system of claim 27, wherein said relock word is
2 among a plurality of such relock words and said second frame includes said plurality of
3 such relock words.

1 29.   The telecommunications system of claim 25, further comprising:
2   a switching matrix coupled to said communications interface, wherein
3   said switching matrix is configured to switch during a period of time
4   during which said relock word traverses said switching matrix.

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1   30.   A telecommunications system comprising:

2   means for receiving a datastream, wherein said data stream comprises a first

3   plurality of words;

4   means for rearranging said data stream into a second plurality of words, wherein

5   said second plurality of words include a relock word, and

6   said relock word is configured to allow said telecommunications system to

7   synchronize with said data stream; and

8   means for determining, for each of said second plurality of words, if said each of

9   said second plurality of words should be included in the generation of a

10   backplane parity value by determining if said each of said second plurality

11   of words is said relock word.

1   31.   The telecommunications system of claim 30, further comprising:

2   means, for said each of said second plurality of words,

3   for ignoring said each of said second plurality of words, if said each of

4   said second plurality of words is said relock word, and

5   for including said each of said second plurality of words in said parity

6   calculation, otherwise.

1   32.   The telecommunications system of claim 31, wherein said parity

2   calculation comprises:

3   calculating said backplane parity value by performing a bit-wise exclusive-or

4   between said each of said second plurality of words included in said parity

5   calculation, wherein said each of said second plurality of words included

6   in said parity calculation is a byte.

1   33.   The telecommunications system of claim 31, wherein said first plurality of

2   words is organized as a first frame having a first frame format and said second plurality

3   of words is organized as a second frame having a second frame format.

1   34.   The telecommunications system of claim 33, wherein said relock word is

2 among a plurality of such relock words and said second frame includes said plurality of

3 such relock words.

1   35.   The telecommunications system of claim 31, further comprising:

2 switching means for switching said data stream, wherein

3   said switching means is coupled to said means for receiving, and

4   said switching means is configured to switch during a period of time

5   during which said relock word traverses said switching means.

1   36.   A telecommunications system comprising:

2 a switching matrix;

3 a communications interface, wherein

4   said communications interface is coupled to said switching matrix,

5   said communications interface is configured to receive a data stream

6   comprising a plurality of words,

7   said words include at least one word that is designated as a relock word,

8   said switching matrix is configured to to be switched without causing

9   disruption of another data stream being communicated through

10   said switching matrix by switching during a period of time during

11   which said at least one word traverses said switching matrix; and

12   a parity generation circuit, coupled to said communications interface.

1   37.   The telecommunications system of claim 36, wherein said parity

2 generation circuit comprises:

3   parity function unit, wherein said parity function unit is configured to generate a

4   backplane parity value; and

5   position detector, coupled to said parity function unit, wherein

6   said position detector is configured to cause said parity function unit to

7   include one of said words in said generation of said backplane

8   parity value if said one of said words is not said at least one word.

1   38.   The telecommunications system of claim 36, wherein

2   said parity generation circuit is configured to determine if one of said words

3   should be included in generating a backplane parity value by determining

4   if said one of said words is said at least one word.

1   39.   The telecommunications system of claim 36, wherein

2   said parity generation circuit is configured to generate a backplane parity value

3   using ones of said words that are not said at least one word.

1   40.   The telecommunications system of claim 36, wherein said

2   communications interface is further configured to:

3   insert said backplane parity value into said data stream; and

4   communicate said data stream through said switching matrix.

1   41.   The telecommunications system of claim 36, wherein said

2   communications interface further comprises:

3   a frame assembly unit, coupled to an input and an output of said communications

4   interface.

1   42.   The telecommunications system of claim 41, wherein

2   said frame assembly unit is configured to allow insertion of said backplane parity

3   value into said data stream, and

4   said communications interface is configured to communicate said data stream

5   through said switching matrix.

1   43.   The telecommunications system of claim 41, further comprising:

2   a parity checking circuit, wherein

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3   said communications interface comprises a receive section coupled to an

4   input of said switching matrix and a transmit section coupled to an

5   output of said switching matrix,

6   said receive section comprises said parity generation circuit, and

7   said transmit section comprises said parity checking circuit.

1   44.   The telecommunications system of claim 37, wherein said parity checking

2   circuit comprises:

3   a parity generation unit;

4   a storage unit;

5   a comparison unit, coupled to said parity generation unit and said storage unit;

6   and

7   a parity checking control unit, coupled to said parity generation unit, said storage

8   unit and said comparison unit.

1   45.   The telecommunications system of claim 44, wherein

2   said parity checking control unit is configured to cause said parity generation unit

3   to generate a parity value,

4   said parity checking control unit is configured to cause said storage unit to store

5   said backplane parity value, and

6   said comparison unit is configured to compare said parity value and said

7   backplane parity value, and to indicate an error if said parity value and

8   said backplane parity value do not match.

1   46.   A method of generating a backplane parity value comprising:

2   for each of a plurality of words in a data stream,

3   determining if said each of said words should be included in said

4   generation of said backplane parity value by determining if said

5   each of said words is a relock word, wherein

6   at least one of said words is designated as said relock word,

7   said data stream is to be communicated through a switching matrix

8   of a telecommunications system, and

9   said at least one of said words allows said switching matrix to be

10   switched without causing disruption of another data stream

11   being communicated through said switching matrix.

1   47.   The method of claim 46, wherein a plurality of relock words includes said

2   relock word and said relock words are included in said words.

1   48.   The method of claim 47, further comprising:

2   generating said backplane parity value using those of said each of said words that

3   are not said relock words.

1   49.   The method of claim 47, further comprising:

2   inserting said backplane parity value into said data stream; and

3   communicating said data stream through said switching matrix.

1   50.   The method of claim 49, further comprising:

2   switching said switching matrix during a period of time during which said relock

3   words traverse said switching matrix.

1   51.   The method of claim 49, further comprising:

2   receiving said data stream from said switching matrix;

3   generating a parity value from said data stream;

4   comparing said parity value to said backplane parity value; and

5   generating an error signal if said comparison indicates that said parity value and

6   said backplane parity value do not match.

1   52.   The method of claim 46, wherein said relock words configured to allow

2   said telecommunications system to synchronize with said data stream.

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1   53.   The method of claim 46, further comprising:

2   rearranging said data stream into a second plurality of words, wherein

3   a plurality of said second plurality of words are designated as relock

4   words, and

5   said relock word is among said relock words.

1   54.   The method of claim 53, wherein said relock words are configured to

2   allow said telecommunications system to synchronize with said data stream.

1   55.   The method of claim 53, wherein

2   said words are organized as a first frame having a first frame format,

3   said second plurality of words is organized as a second frame having a second

4   frame format,

5   said first frame format is that of a SONET frame, and

6   said second frame format is that of an Errorless Switching frame.

1   56.   A computer program product for generating a backplane parity value, said

2   computer program product encoded in computer readable media, said computer program

3   product comprising:

4   a first set of instructions, executable on a computer system, configured to, for

5   each of a plurality of words in a data stream,

6   determine if said each of said words should be included in said generation

7   of said backplane parity value by determining if said each of said

8   words is a relock word, wherein

9   at least one of said words is designated as said relock word,

10   said data stream is to be communicated through a switching matrix

11   of a telecommunications system, and

12   said at least one of said words allows said switching matrix to be

13   switched without causing disruption of another data stream

14   being communicated through said switching matrix.

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1   57.   The computer program product of claim 56, wherein a plurality of relock

2   words includes said relock word and said relock words are included in said words.

1   58.   The computer program product of claim 57, further comprising:

2   a second set of instructions, executable on said computer system, configured to

3   generate said backplane parity value using those of said each of said words

4   that are not said relock words.

1   59.   The computer program product of claim 57, further comprising:

2   a second set of instructions, executable on said computer system, configured to

3   insert said backplane parity value into said data stream; and

4   a third set of instructions, executable on said computer system, configured to

5   communicate said data stream through said switching matrix.

1   60.   The computer program product of claim 59, further comprising:

2   a fourth set of instructions, executable on said computer system, configured to

3   switch said switching matrix during a period of time during which said

4   relock words traverse said switching matrix.

1   61.   The computer program product of claim 59, further comprising:

2   a fourth set of instructions, executable on said computer system, configured to

3   receive said data stream from said switching matrix;

4   a fifth set of instructions, executable on said computer system, configured to

5   generate a parity value from said data stream;

6   a sixth set of instructions, executable on said computer system, configured to

7   compare said parity value to said backplane parity value; and

8   a seventh set of instructions, executable on said computer system, configured to

9   generate an error signal if said comparison indicates that said parity value

10   and said backplane parity value do not match.

62. The computer program product of claim 56, wherein said relock words

configured to allow said telecommunications system to synchronize with said data

stream.

63. The computer program product of claim 56, further comprising:

a fourth set of instructions, executable on said computer system, configured to

rearrange said data stream into a second plurality of words, wherein

a plurality of said second plurality of words are designated as relock

words, and

said relock word is among said relock words.

64. The computer program product of claim 63, wherein said relock words are

configured to allow said telecommunications system to synchronize with said data

stream.

65. The computer program product of claim 63, wherein

said words are organized as a first frame having a first frame format,

said second plurality of words is organized as a second frame having a second

frame format,

said first frame format is that of a SONET frame, and

said second frame format is that of an Errorless Switching frame.

66. A telecommunications system comprising:

a processor;

a communications interface, coupled to said processor;

computer readable medium coupled to said processor; and

computer code, encoded in said computer readable medium, configured to

generate a backplane parity value by virtue of being configured to cause

said processor to

for each of a plurality of words in a data stream,

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9   determine if said each of said words should be included in said

10   generation of said backplane parity value by determining if

11   said each of said words is a relock word, wherein

12   at least one of said words is designated as said relock word,

13   said data stream is to be communicated through a switching

14   matrix of a telecommunications system, and

15   said at least one of said words allows said switching matrix

16   to be switched without causing disruption of

17   another data stream being communicated through

18   said switching matrix.

1   67.   The telecommunications system of claim 66, wherein a plurality of relock

2   words includes said relock word and said relock words are included in said words.

1   68.   The telecommunications system of claim 67, said computer code further

2   configured to cause said processor to:

3   generate said backplane parity value using those of said each of said words that

4   are not said relock words.

1   69.   The telecommunications system of claim 67, said computer code further

2   configured to cause said processor to:

3   insert said backplane parity value into said data stream; and

4   communicate said data stream through said switching matrix.

1   70.   The telecommunications system of claim 69, said computer code further

2   configured to cause said processor to:

3   switch said switching matrix during a period of time during which said relock

4   words traverse said switching matrix.

71.   The telecommunications system of claim 69, said computer code further configured to cause said processor to:

receive said data stream from said switching matrix;

generate a parity value from said data stream;

compare said parity value to said backplane parity value; and

generate an error signal if said comparison indicates that said parity value and

said backplane parity value do not match.

72.   The telecommunications system of claim 66, wherein said relock words configured to allow said telecommunications system to synchronize with said data stream.

73.   The telecommunications system of claim 66, said computer code further configured to cause said processor to:

rearrange said data stream into a second plurality of words, wherein

a plurality of said second plurality of words are designated as relock

words, and

said relock word is among said relock words.

74.   The telecommunications system of claim 73, wherein said relock words are configured to allow said telecommunications system to synchronize with said data stream.

75.   The telecommunications system of claim 73, wherein

said words are organized as a first frame having a first frame format,

said second plurality of words is organized as a second frame having a second

frame format,

said first frame format is that of a SONET frame, and

said second frame format is that of an Errorless Switching frame.

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1   76.   An apparatus for generating a backplane parity value comprising:

2   means for determining, for each of a plurality of words in a data stream, if said

3   each of said words should be included in said generation of said backplane

4   parity value by determining if said each of said words is a relock word,

5   wherein

6   at least one of said words is designated as said relock word,

7   said data stream is to be communicated through a switching matrix of a

8   telecommunications system, and

9   said at least one of said words allows said switching matrix to be switched

10   without causing disruption of another data stream being

11   communicated through said switching matrix.

1   77.   The apparatus of claim 76, wherein a plurality of relock words includes

2   said relock word and said relock words are included in said words.

1   78.   The apparatus of claim 77, further comprising:

2   means for generating said backplane parity value using those of said each of said

3   words that are not said relock words.

1   79.   The apparatus of claim 77, further comprising:

2   means for inserting said backplane parity value into said data stream; and

3   means for communicating said data stream through said switching matrix.

1   80.   The apparatus of claim 79, further comprising:

2   means for switching said switching matrix during a period of time during which

3   said relock words traverse said switching matrix.

1   81.   The apparatus of claim 79, further comprising:

2   means for receiving said data stream from said switching matrix;

3   means for generating a parity value from said data stream;

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4   means for comparing said parity value to said backplane parity value; and

5   means for generating an error signal if said comparison indicates that said parity

6   value and said backplane parity value do not match.

1   82.   The apparatus of claim 76, wherein said relock words configured to allow

2   said telecommunications system to synchronize with said data stream.

1   83.   The apparatus of claim 76, further comprising:

2   means for rearranging said data stream into a second plurality of words, wherein

3   a plurality of said second plurality of words are designated as relock

4   words, and

5   said relock word is among said relock words.

1   84.   The apparatus of claim 83, wherein said relock words are configured to

2   allow said telecommunications system to synchronize with said data stream.

1   85.   The apparatus of claim 83, wherein

2   said words are organized as a first frame having a first frame format,

3   said second plurality of words is organized as a second frame having a second

4   frame format,

5   said first frame format is that of a SONET frame, and

6   said second frame format is that of an Errorless Switching frame.

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